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THE TENDENCY OF SO-CALLED LOCAL DISEASES TO GENERALIZATION.

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AT a meeting of the Medical Improvement Society on March 27th, 1865, a short paper was read by me upon the liability of various parts of the body to undergo structural change.* The title was objectionable, as it expressed an opinion, where the limited number of facts would only warrant a surmise, and appeared to express the convictions of the writer, whose only object in bringing forward the cases at the time was to call attention to what might, perhaps, prove, after further inquiry, an important fact, viz., the existence of structural or formative changes in diseases where none had previously been found; the participation of several organs in diseases supposed to be more or less strictly confined to one; or the danger that morbid action in one part may excite changes in others more or less remote. It was believed that with the new means of investigation furnished by modern science, various changes would be detected, not so obvious, perhaps, but quite as important as those previously described.

Further inquiry and subsequent experience have proved the correctness of these views. It has been found that medical literature can furnish many cases which show that the tendency of disease to generalization is much greater than was supposed.

Many of the instances cited to prove this are so old, so familiar to all, it is feared that the first objection will be that their introduction is entirely unnecessary. It is, of course, fully recognized that such facts are not new, that they have been, to a certain extent, properly interpreted, but it is also believed that their full significance has not been understood, in relation to the points we are about to discuss, and they are now brought together in this connection *to show that certain phenomena which had been regarded as isolated or exceptional are only manifestations of a general law.*

Another objection, which it may be well to anticipate at the outset, is the incompleteness or defective character of the evidence. This is inevitable, owing to the nature of the inquiry. No attention having been paid to the special points which interest us, in their bearing upon a general law, nothing, as far as is known, exists upon the subject, as a subject, and the materials have been drawn from various sources. Not having been contributed with any reference to our inquiry, there are omissions which weaken the testimony. But it may, perhaps, be questioned whether the possible error from this source is greater than that arising from the bias of a preconceived idea.

It must also be stated that only such parts of recorded cases or articles are introduced as have an immediate bearing upon the subject, but care has been taken to exclude the more questionable facts.

But, whatever the value of the evidence may be, it is only claimed that it is of such a character as to make it probable that the conclusions drawn may be correct. The absolute proof furnished by observations of the most rigorously scientific character must be derived from future inquiry.

In the article alluded to, several cases were cited; one that of a man who, in falling upon the sidewalk, struck upon a hard substance in his pocket. Dying a few days after, one kidney was found fractured; both organs were enlarged and softened, and the tubuli were crowded with epithelium, resulting from a process of growth. There was also double pneumonia.

As the man had previously been well, the order of events seems clear: first the fall and fracture of the kidney, and subsequently, as a consequence of the accident, the great multiplication of cell elements in the tubuli, and a similar increase of corpuscles in the air cells, constituting the essential lesion of pneumonia.

* Boston Med. and Surg. Journal, vol. lxxii. p. 229.

In a second case, there was double pneumonia, with a similar affection of the kidneys.

On again opening the subject, I shall first cite cases of various kinds, solely with reference to the supposed law that *disease tends to generalize itself much more frequently than is usually believed.* The cases will be brought forward without regard to distinctions previously made, their physiological and pathological significance being afterwards examined.

Acute Pneumonia; Supervention of Inflammation of the Pia Mater; Supervention or Coëxistence of Renal Disease, and that of other Organs.—A very striking case of the above was noticed by the writer in his ward in the Massachusetts General Hospital in November, 1869.

A man, 30 years of age, entered soon after the commencement of an attack of pneumonia. There had been some transient delirium at the commencement, after over exertion, but this disappeared, and nothing of the kind was noticed until towards the close of the case.

He had served in the army during the years 1862, '63 and '64, and had been troubled more or less with chronic diarrhœa, and subject to attacks of "chills and fever" until 1866. The *urine* was examined soon after entrance, and found to contain a moderate quantity of albumen and some granular casts. The chlorides were diminished. He lived but ten days, during which time the physical signs showed that the inflammation had extended from the posterior part of the right lung and involved nearly the whole organ.

At the autopsy, nearly the whole *right lung* was found *hepatized;* the *pia mater* was everywhere more or less *infiltrated or covered with pus;* the *kidneys* were *softer, looser, more pulpy* than usual, and the microscope showed the *tubuli* to be *crowded with cell elements.*

Bennett, in his Clinical Medicine,* reports a case somewhat similar. A coalheaver, 43 years old, entered the hospital with pneumonia, and died eight days after the commencement of the attack, cerebral symptoms having manifested themselves during the last twenty-four hours.

The autopsy showed marked *inflammation* of the *pia mater* and grey *hepatization* of the lower fourth of the right *lung.* The *spleen* was *soft* and *pulpy.* The *liver* weighed 6 lbs. 4 oz.; was *pale and soft.* As no microscopic or other accurate description of the last two organs is given, and as the patient was intemperate, we must remain in doubt about the precise nature of the changes, but they correspond in some respects with those which have been noticed in some other acute diseases.

In the same volume* there is reported the case of a man, 43 years old, who entered the hospital with pneumonia of the right lung, the duration of which could not be ascertained. On the evening of the second day he was attacked with acute meningitis, and died.

The autopsy showed universal cerebral *meningitis* and grey *hepatization* of the whole right lung.

Cerebral Disease followed by Pneumonia.—The following three cases show the converse, viz., the supervention of pneumonia upon cerebral disease. In one of them there were also symptoms of renal disorder.

Case I.—Bennett† reports the case of a patient who was suddenly attacked with paralysis of the face and left arm, on Nov. 5th. When she entered the hospital, on the 7th, the urine was slightly coagulable. On the 14th, there was diagnosticated pneumonia of two thirds of the left lung. On Dec. 11th every trace of pulmonary disease had disappeared, but the albumen had increased and fatty and waxy casts were found. On Jan. 1st there was no trace of paralysis of the face or arm; the urine was less coagulable by heat and no casts were seen. She was then discharged at her own request.

Remarks.—If we could know the condition of the kidney before the attack of paralysis, we should have an instance somewhat similar to that previously reported, where fracture of one kidney was followed by disease of both organs and hepatization of the lungs. We might reasonably infer that the injury to the brain, acting as a cause, was followed by pneumonia and a similar new formation of cell elements in the kidneys; and that, as the primary lesion improved, the other structural changes ceased and gave place to the normal action of the parts. Unfortunately, the patient left before the urine had become natural, but the marked improvement gives us reason for inferring that the change in the kidneys was connected with the other lesions, and that restoration was going on here as we saw it completed in the lungs.

Case II.‡—A patient, 53 years old, was attacked, on Jan. 1st, with paralysis of the left side. When she entered the hospital,

* P. 317.

* P. 638.
† Clinical Medicine, p. 360.
‡ Ibid, p. 362.

on the 10th, signs of pneumonia were detected, and she died on the 12th.

The autopsy showed effusion of blood into the right hemisphere, hepatization of the lower half of the lower right lobe and some purulent-looking formations.

Case III.*—A woman, 59 years old, was suddenly struck down by an effusion of blood into the left corpus striatum. She entered the hospital on the day of the attack. Three days after, she was seized with pneumonia, which terminated fatally in two days.

Autopsy.—In addition to the extravasation of blood into the left corpus striatum, there was hepatization of the two lower lobes of the right lung.

In connection with this case, Bennett remarks that pneumonia is one of the most common sequelæ of severe lesions at the base of the brain.

It has been noticed that the kidneys have been involved in some of the cases grouped together to illustrate other more striking connections, and it is probable that these organs are affected much more frequently than is generally suspected. While following the course on Pathological Anatomy, given by Prof. Virchow in Berlin in 1870, the examples of this were quite striking, and a number may be cited here.

Lesions of Kidneys and other Organs.—1. The *lungs* of a boy were shown, affected with *pneumonia*. The *kidneys* were also *enlarged* and in that condition which indicates the multiplication of the cell elements in the tubuli. The *spleen* also showed similar changes.

2. In another case of *pneumonia*, the *kidneys* were also *enlarged* and *opaque*, as in the above.

3. In another rare variety of *pneumonia*, the interstitial, resembling that seen in cattle, there was severe *pleurisy* and the *kidneys* were affected in the manner already described. The *liver* and *spleen* were also *enlarged* by recent disease.

Mr. E. S. Wood, a member of the present medical class, during his residence at the Chelsea Marine Hospital, examined the *kidneys* in a large number of cases of *typhoid fever*, and found the change described by Virchow as a proliferation of the cell-elements, sufficient to fill or distend the tubuli.

It may be well, in this connection, to allude to the frequency of renal disease in scarlet fever, although this and the preceding instances differ from those previously cited, inasmuch as they are regarded as general diseases. While we reserve the discussion of this point for future consideration, there can be no question of the propriety of retaining both instances as examples of the liability of the kidneys to be attacked. Let the question at present be one of fact, not cause.

* Bennett, p. 361.

The Influence of the Uterus in exciting Structural Disease elsewhere.

We now come to a very interesting class of cases—those in which various changes of the uterine tissue exert a marked influence upon the condition of other organs.

Effect of Pregnancy upon the Kidneys.—Let us first allude to the well-known effect of pregnancy in exciting disease of the kidneys. Blot states that albuminuria occurs as often as in one case in five. Dr. Elliot, in his Obstetric Clinic, states that out of 437 pregnant women albumen was found in 23; but, as in 3 it was probably connected with pus, the proper number is 20. Other evidences of disease were also found, such as casts, &c. The conditions of the organs examined were those described under the heads of desquamative nephritis, proliferation of the elements, parenchymatous swelling, &c.

He considers pregnancy as "the special excitor in very many cases of albuminuria which had not previously existed," and also "as materially developing those morbid conditions in many chronic cases, in which they might possibly have remained latent for a much longer period; or in which they might have disappeared without such excitation, thus offering an inevitable increase of risk, analogous to those which we seek to avoid when albuminuria is uncomplicated with this state."

Roberts* states that "albuminuria is not usual before the seventh or eighth month, and even not until the approach of labor; though sometimes it may appear as early as the third month. It increases up to the time of delivery, and then rapidly passes away, so that it may disappear in forty-eight, or even in twenty-four hours, but it may persist for ten or fifteen days. If found after this period, there is reason to fear that chronic renal disease will follow."

If the above statements be correct, they show very clearly that pregnancy has a marked influence upon the development of cells in the kidneys, and that the latter process ceases after the new functions of the uterus are ended.

After seeing these changes produced by a simple physiological process, it becomes most interesting to observe the action of

* Urinary and Renal Diseases, London, 1865, p. 287.

severe *disease* of the uterus in exciting not only this change, but similar modifications of other organs.

Effect of Diseases of the Uterus upon other Organs.—Virchow's pathological course again furnishes very important facts in this connection. Specimens from two cases were shown at the same time, in one of which the *inflammation of the uterus*, in a puerperal case, was limited in extent and attended by but slight change in the *liver*, *spleen* and *kidneys*.

In a second case, where *inflammation* was extensive and severe, those organs were all considerably enlarged by parenchymatous disease, in which the elements were swollen and changed in their microscopic characters.

In another case of *puerperal diphtheria* of the *uterus* and *vagina*, there was no evidence of embolism, but the *liver*, *spleen* and *kidneys* showed advanced parenchymatous disease.

A still more striking instance was afforded by a case in which a *diphtheritic process of the uterus*, extending to the skin outside of the vagina, was followed by *acute swelling* (whitish opacity) of the *liver*, "very fine *acute swelling* of the *kidneys*," hæmorrhagic *pyelitis; inflammation* of the *bladder; acute pneumonia*, not of the character of that seen in pyæmia; and a *softened spleen*. There was no pus, no inflammation of the lymphatics, nor phlebitis, nor any other sign of pyæmia.

In a case of *oophoritis*, *perimetritis* and *inflammation* of the placental portion of the *uterus*, the *liver*, *spleen* and *kidneys* were *swollen* by the same acute process.

In another case, where the puerperal process was more chronic, similar changes were noticed in the *kidneys*, *spleen* and *liver*; and there were, in addition, *pleurisy*, *pyæmic* formations in the *lungs*, and secondary *diphtheria* of the *larynx*.

Prof. Rud. Maier, of Freiburg, has published an article* upon this subject, in which he states that in the various forms of inflammation of the uterus in the puerperal state, there was almost always some affection of the heart, liver or kidneys, and, in most cases, all three organs were affected.

The appearances were such as are described by Buhl and Hecker.† They indicated fatty degeneration, which appeared to have been preceded by an acute inflammatory condition, were most marked in the kidneys, but also seen in the heart. Although the changes differ in different organs, the writer considers that they all had the character of acute degenerative processes. As this general statement is sufficient for our purpose, the details have not been given.

Let us now, while these cases are fresh in our minds, endeavor to comprehend their true significance. We appear to have a real sequence in which the physiological blends with the pathological. Throwing aside all preconceived ideas, and beginning with the changes produced by conception, we see marked changes in the nutrition of the body as a whole and in many particular parts. We have the enlargement of the uterus itself; a marked modification of the vagina; the symphisis pubis is loosened by a decided change in the uniting tissues; the breasts enlarge and finally secrete milk, which implies a new formation of cells; the color of the areolæ changes by the formation of pigment, and the latter makes its appearance at other points, in lines or patches, which show a new action on the part of preëxisting cells.

These variations we properly call physiological, but in a certain number of cases the formative change extends beyond the proper physiological limits and involves the kidneys; the multiplication of elements within the tubuli interferes with the functions of the parts whose healthy action is essential for the integrity of the body, and in this way may prove fatal, although similar in character to that previously mentioned. In still more striking cases, the uterus is attacked by inflammation after the birth of the child; its influence radiates still more widely, and many organs may be affected. The modifications of nutrition are so marked and extensive that life is no longer possible, and yet if we compare these changes with those already described, we shall find that they resemble each other very closely in their minute anatomical characteristics.

Effect of Disease of the Kidneys upon other Organs.—The kidneys have been seen to suffer very frequently in connection with diseases of other parts. Conversely, we have the most abundant evidence to show that all parts suffer from disease of the kidneys. The fact that these abnormal conditions may be explained by the retention of injurious materials is of no consequence now, as we are still dealing with facts, not causes. Beale states very clearly that "in chronic cases of renal disease there is scarcely an organ in the body which retains its healthy

* Virchow's Archiv für Pathologischen Anatomie, vol. xxix. p. 526.

† Ibid., p. 552.

state, and of the persons, whose deaths are registered as resulting from pneumonia, bronchitis, dropsy, convulsions, various forms of disease of the nervous system and other conditions, not a few are really caused by renal disease, and the special disease is but a consequence of the primary changes in the kidney." He considers that many of these changes progress slowly, and, though a whole organ may be affected to a certain extent, the elements may still possess the power of limited action. Though no complete lesion may be found in the great nervous centres by an ordinary examination, the changes here are so difficult to detect or appreciate, that we must be exceedingly cautious in pronouncing the parts healthy. The variations are of such a character that they cannot be detected by a superficial examination, and often not by the closest scrutiny with the naked eye. But the microscope has already revealed so much, we may hope for large additions to our knowledge, in this respect, in the future.

One of the most common ascertained changes is that of the retina, which takes place in many chronic diseases of the kidney, though it may be too slight to attract the attention of the patient. It may progress, however, until it amounts to complete blindness. Its essential character is a fatty degeneration of the bloodvessels or nerves, which may be noticed during life. Its course is generally slow, but sometimes sight is lost in a few weeks.

Though so well known, I will introduce here, as of great value in our inquiry, the other changes so often seen. More or less *bronchitis* almost always exists. *Pleurisy* and *peritonitis* are not infrequent. *Pericarditis*, though comparatively rare, is the most surely fatal of the inflammatory affections. *Pneumonia* is more common; it breaks out without appreciable exciting cause and terminates fatally. The universal anasarca, though not regarded as a lesion of nutrition, seems much more easily explicable as such, than in any other way.

The Effect of Disease or Injury of External Parts in exciting Changes in the External Organs.—The series of cases showing this is quite striking.

Erysipelas as an Excitor of Internal Disease.—Beale* reports a case in which *erysipelas* attacked a patient four days after an operation for strangulated hernia, and lasted three days. The day after the disappearance of the erysipelas, the *urine*, which had previously been healthy, was found to contain *albumen*, *casts* and *blood corpuscles*. Nineteen days after, the patient died, the suppression of urine having been nearly complete during the last three days.

The *kidneys* were much *enlarged*, one weighing fifteen, the other thirteen ounces, the increased weight being attributable to an accumulation of large cells like white corpuscles in the capillary vessels, and of casts and cells like pus corpuscles in the tubes.

Bennett* reports the case of a patient, who was attacked with *erysipelas* of the face on December 5th. On the 7th, the *urine* was found to contain a considerable quantity of *albumen*; on the 11th, symptoms of *pneumonia* showed themselves, and were followed by complete hepatization; on the 24th, the patient was nearly well. An examination of the urine on the 13th, proved that the albumen had disappeared.

If we regard the appearance and disappearance of the albumen as the expression of the condition of the kidneys, we must conclude that the erysipelas produced a marked effect upon those organs, while they were not influenced by the pneumonia, as the albumen disappeared while the pulmonary disease was progressing.

M. Sabbé,† after reporting a case of *erysipelas*, which extended to the mouth, throat and lungs by continuity, adds that there exists a form of erysipèle ambulant, which invades the most remote parts of the body without passing by intermediate surfaces.

Frank‡ states that a rose or even a scarlet color of the minenges pleura or peritoneum is often found in cases of erysipelas, and that a serous or puriform fluid collects in the neighboring cavities. He then makes a still stronger statement that he has hardly ever made the autopsy of a patient dying with erysipelas, without finding some interior lesion, such as abscess of the ears, caries of the mastoid cells, or of the maxillary or frontal bone.

Hebra, in his work on Diseases of the Skin, says that, as an immediate cause of death after erysipelas, we have hyperæmia or œdema of the brain or meninges; pneumonia; pleurisy; pericarditis; peritonitis and enteritis.

These general statements, in connection with the single cases reported, leave no reasonable doubt that the disease merits a place among those which show a disposition to generalize themselves.

* Page 48.

* Clinical Medicine, p. 632.
† Bulletin de la Société Anatomique, 1858, p. 60.
‡ Pathologie Interne, vol. ii. p. 74.

Effect of Burns upon the Internal Organs.—The above being true, we should be ready to believe that burns might be followed by similar results.

Ericsen* states, from the second day to the second week after a burn we have affections of the internal organs, particularly of the abdominal and thoracic viscera. Death is caused by some inflammation of the gastro-intestinal mucous membrane, with, perhaps, the addition of that of the peritoneum. We may also have pneumonia or bronchitis. The most unequivocal signs of inflammation of the brain may also show themselves in the form of congestion or serous exudation. Perforating ulcer of the duodenum is especially apt to occur, usually on the tenth day after the burn, seldom earlier. One case, however, is mentioned, where a child nine years of age died on the fourth day after a burn, in whose duodenum was an ulcer as large as a shilling, the intestinal mucous membrane being at the same time generally inflamed.

The Influence of Severe Wounds in causing Internal Changes.—Dr. Waldeyer, of Breslau,† has published an article in which he includes the appearances under four principal heads.

1. Embolism. 2. Ichorrhæmia, in which there is diffused suppuration of an acute character without any necessary putrefaction. 3. Septicæmia, in which putrefying substances make their way into the blood. 4. Traumatic phthisis or consumption. He met with hardly a single case in which one alone of these appearances was noticed.

We are particularly interested in those changes included under the head of ichorrhæmia or septicæmia, or with many of the appearances generally mentioned under the head of pyæmia, such as suppuration of the joints, inflammation of the serous cavities, which, our author states, are not cleared up by the ordinary explanations. He reports a case where a patient died four weeks after a wound in the foot, with seropurulent effusions into the subarachnoid spaces of the cerebellum. No connection between the two could be shown, and the author considers the explanation so difficult as to admit that he should be inclined to regard the meningitis as an accidental complication, if such affections of the brain had not been frequently mentioned in connection with pyæmia.

The most constant changes noticed in the bodies of those who had died from wounds were seen in the lymphatic apparatus of the intestines and mesentery, both by the naked eye and with the microscope. The appearances were those of hyperplasia and fatty degeneration. Swelling of the lymphatic follicles of the intestines and diarrhœa were common. The cortical substance of the kidneys was affected with almost as great frequency as the lymphatic apparatus of the intestines. The most frequent change was a more or less considerable swelling, with marked opacity and moderate fatty change of the convoluted canals. This was seen in nearly 80 per cent. of the cases.

Much more rarely we have simple opacity with swelling; simple hyperæmia or a normal appearance. The highest degree of swelling and opacity was seen in cases of ichorrhæmia in which other organs were affected. The organs varied in *consistence*, being sometimes very soft, sometimes dense and firm. Both were changed in the same way, the difference being at most a quantitative one. *Normal kidneys with marked changes in other viscera were not found.*

Changes in the *spleen* were by no means constant, although fever and rigors were common. It was found perfectly normal in eleven out of sixty cases, even when there were changes in the liver, kidneys and lungs. The lesions when seen were: 1. Considerable swelling of the organ, which had a soft, pulpy consistence; 2. Dense, firm hyperplasia; 3. Great hyperplasia of the Malphigian corpuscles; 4. Abscesses.

The *liver* presented the following characters: 1. It was completely normal; 2. There was simple swelling; 3. Simple fatty infiltration in the course of the portal vein; 4. Granular fatty and degenerative opacity; 5. Enlargement by stagnation of bile, either with or without degenerative changes; 6. Abscesses.

The mucous membrane of the pyloric portion of the stomach was often considerably swollen and opaque. This was prolonged into the duodenum and upper part of the jejunum. In the duodenum, Brunner's glands projected as yellowish, opaque masses of the size of a lentil. All the coats of the stomach and intestines were succulent and not unfrequently œdematous. He once saw a diphtheritic process in the large intestine.

Caries of the Temporal Bone and Inflammation of the Pia Mater.—The cases of inflammation of the pia mater, which, at times, supervene so suddenly upon caries of the temporal bone, when no connection

* Science and Art of Surgery, 2d ed., p. 333.

† Virchow's Archiv für Pathologischen Anatomie, vol. xl. p. 379.

can be shown between the two, may, perhaps, belong to this category.

Inflammation of the Bladder and Kidneys.—In a number of autopsies made at the Massachusetts General Hospital, the kidneys were found to be the seat of acute inflammation, which was, apparently, the immediate cause of death, though the patients had suffered for a long time with disease of the bladder.

In most cases of the kind, the dilatation and thickening of the ureters and of the pelvis of the kidneys indicated long-continued obstruction to the escape of the urine, but occasionally these changes were wanting and no extension of inflammation from the bladder could be detected.

After the consideration of these groups of cases, it may be well to introduce some which, though isolated, appear to illustrate the same point.

Pneumonia, Pleurisy, Pericarditis and Peritonitis.—In 1855, a man, 80 years old, entered the Massachusetts General Hospital, and died the day after entrance. He was too feeble to give any definite account of himself, but it was ascertained that he had given up work three weeks before entrance, on account of increased weakness, cough, and pain in the right side, which afterwards extended to the left. There was some looseness of the bowels, with abdominal pain.

The autopsy showed *pneumonia, pleurisy, pericarditis* and *peritonitis.*

The absence of any satisfactory history of the case makes it impossible to be certain of the sequence of these changes, but there was evidently something more than extension by continuity.

Bennett* reports a case of acute *peritonitis* caused by the bursting of a Graafian vesicle. The patient died in about twelve days.

In addition to the *peritonitis*, the entire surface of each *pleura* was covered with dirty, greenish *fibrin.* The lower third of the right *lung* was marbled by interlobular *inflammation;* the liver was of a brick-red color, and decidedly softer than usual; the spleen of a pulpy consistence, breaking down under the slightest pressure; and the kidneys were somewhat softened.

In the remarks upon the case we are told that the cause of the disease extending to the right pleura and interlobular spaces could not be discovered.

Inflammation of the Submucous Cellular Tissue of the Stomach. Croup. Acute Disease of the Liver, Spleen and Kidneys.—A stomach was shown by Prof. Virchow, in Berlin, in which the submucous cellular tissue of the stomach was found infiltrated with pus at certain points. The larynx was affected with croup; there was "parenchymatous swelling" of the kidneys; enlargement of the spleen by an increase of its pulp; and enlargement of the liver.

Having thus shown by numerous examples that disease may propagate itself in a large number of cases where this tendency has been overlooked, that one organ after another may be involved, or that several may be attacked at the same time, it is very important that we should understand, if possible, how this extension may take place.

We have already sufficient positive knowledge of morbid processes to regard some points as settled and others as probable, but there still remains much which only affords matter for conjecture.

1. We have the transportation of visible materials through the bloodvessels in the form of *emboli.* I shall only allude to this, as the researches of Virchow and others have removed the subject beyond dispute.

We may also cite, as allied to this, the accumulation of white corpuscles in the capillaries and extravasations of the same in various organs as described by Ranvier* in connection with leucocythæmia, where an immense number of white corpuscles are supposed to be formed in the lymphatic glands and transported to all parts of the body.

2. The transportation of visible materials through the lymphatic canals, as in tattooing, though the coloring matter is here arrested in the first lymphatic gland.

The staining of the bones of animals fed on madder may belong to this class, or the coloring matter may perhaps pass through the bloodvessels.

3. The transportation of invisible, soluble, but distinctly recognizable materials through the vascular or lymphatic system. As instances of this we have the staining of various distant parts by nitrate of silver taken into the stomach, or the effects of poisonous materials, whether introduced from without or originating in the failure of some organ to perform its proper functions, particularly the kidneys.

4. The appearance, in various parts of the body, of similar or allied diseases in cases where no special matter for propagation has been proved to exist, and in which, perhaps, no satisfactory route for its transmission has been found, unless it be through the tissues themselves.

* Clin. Medicine, p. 499.

* Archives de Physiologie Normale et Pathologique, 1869, p. 408.

5. More or less complete generalization or multiplication through the action of the nervous system.

The *fourth* and *fifth* varieties are the only ones which have a bearing upon our inquiry. That nutritious canals exist in the connective tissue which extends throughout the body has been shown by Virchow and others; and admitting this fact we can understand how certain forms of disease may generalize themselves, but we must not forget that in most of the instances cited in this article no *materies morbi* has ever been found possessed of the properties which favor transmission. How are we to explain the generalization in such cases? Let us examine the evidence, commencing with that large class of cases included under the head of purulent infection or ichorrhæmia, in which the presence of some contaminating fluid or material has been suspected, although such has not been demonstrated.

As the lesions peculiar to this condition are so often found in connection with embolism, the question may arise whether ichorrhæmia without the embolic process causes local inflammation and abscesses.* In regard to this there is a difference of opinion. If we regard embolism as mechanical and ichorrhæmia as chemical, we must remember that the bad effect of emboli may be partly owing to their softening, and they may then act chemically. We have in every wound, however inconsiderable, the possibility of ichorrhæmic infection and embolism, the danger commencing whenever the suppuration showed a disposition to spread extensively.†

The *locality* of wounds appeared to have some influence upon the production of ichorrhæmia and of embolic abscesses.‡ Wounds of the head, especially of the scalp, even when the bone was not affected, and those of the upper and lower extremities, were liable to be followed by these accidents; while wounds of the trunk, face and viscera, even if their course was much more protracted, were attended by much less danger in this respect.

The anatomy of the parts seems to explain this, as in the head and extremities there are more continuous portions of connective tissue, through which inflammation can spread more easily. We have the same condition in the uterus and broad ligaments, the amount of loose connective tissue being as great here as in any part of the body. Other authors are referred to who speak of the same points.* Bearing these facts in mind, we can easily understand that rapid and diffuse extension of suppuration is very dangerous, and likely to be followed by general disease.

Granulating surfaces, on the contrary, offer a complete protection against the infectious process. This is shown very strongly in old, offensive ulcers.

Prof. Waldeyer does not think that the cause of the wide-spread inflammatory troubles is a specific poison, and considers that, although embolic masses may pass through the lungs and explain the abscesses in the spleen, liver, kidneys, &c., the *diffused suppurative processes* of the serous membranes, meninges and joints *are unexplained.*

However much we may be inclined to agree with him, no poisonous matter having been demonstrated, we could hardly consider the reason for his belief sufficient, viz., that the appearances vary so much, while the manifestations in other specific processes are the same everywhere.

But, however this may be, we certainly have not learned what *ichor* is. Neither do the researches of Virchow, profound as they are, throw any more light upon the exact nature of this supposed agent. He describes ichorrhæmia† as "that inclination to the production of metastatic collections of inflammatory, diphtheritic, erysipelatous, purulent processes which I have elsewhere called the purulent disposition. Still, it appears to me that it is characterized less by circumscribed lobular formations than by those of a diffused character, as in metastatic arachnitis, meningitis or diffused infiltration of the subcutaneous or intermuscular cellular tissue; acute metastatic affections of the joints or of the serous membranes; the parenchymatous inflammation of the great abdominal organs; the diphtheritic and croupal inflammation of the intestines, air-passages, parotids, &c. These affections have everywhere a great inclination to extension."

Billroth, in the Archiv für Clinische Chirurgie, describes one variety of disease, in which the metastatic formations are demonstrable in a mechanical way by emboli, and another in which no emboli can be demonstrated, but in which there is a *diffused purulent inflammation in the lungs, liver and joints, which appears to arise spontaneously.*

We see that the term *ichor* is applied to a supposed morbific agent, of which we know absolutely nothing. It has been very generally accepted, as if something of the

* Archiv für Pathologischen Anatomie, vol. xl. p. 411.
† Ibid., p. 414. ‡ Ibid., p. 413.

* Archiv für Path. Anat., vol. xl. p. 416.
† Ibid., p. 398.

kind were necessary to explain certain phenomena; but if we look at the question in all its aspects, such a supposition seems to be unwarranted. We know that the most striking formative changes may be produced without the agency of any such matter.

Pneumonia has never been supposed to furnish a poison which could contaminate the rest of the body, and yet we have sufficient proof that it is frequently accompanied by affections of other parts.

Pregnancy has no poisonous influence, and yet we need but the contact of the impregnated ovum with the inner surface of the uterus to originate a series of structural physiological modifications of many portions of the body. To these, pathological changes in the kidneys are sometimes added. The latter is attributed to congestion, caused by pressure upon the bloodvessels, by many writers, and among them Beale, who admits, however, that such changes may be brought about by disease of the blood, or the influence of the nerves, such as prolonged excessive violent nervous exertion, particularly in close, hot rooms, with a very imperfect supply of air. With the absence of this lesion in so many cases of pregnancy where there must be congestion, with its presence under the conditions enumerated by him, and with its appearance in connection with so many different diseases, we should certainly not be justified in concluding that pressure upon the bloodvessels alone, and consequent congestion, is the only cause in pregnancy, where so many other modifications of organs and tissues take place. We have, as a lesion, the multiplication of cells, and we see this occur under a great variety of influences, one of which is simple exposure to cold. This process of multiplication interferes with the usual function of the cells, replacing it, as it were, just as in embryonic life, when the process of growth is so rapid there is but little secretion of any kind.

Beale also states that the same suspension of function is seen in the sweat glands, in the tubular glands of the uterus and in the testicle, where these parts are enlarged by a great development of cell elements.

In the cases of cerebral disease followed by pneumonia, and in burns, we certainly cannot suppose the action of a special *materies morbi*.

If erysipelas, typhoid and scarlet fever be cited, specific contagious principles are at once and very properly offered in explanation, and the multitude of lesions is supposed to indicate a general disease. A sufficient objection to the latter term is that it explains nothing, but merely expresses this generalization in another way. It is only an unconscious announcement of our ignorance of the real nature of the process. But, admitting its action in its widest conceived sense as a something seizing upon the blood or tissues, and manifesting itself at many points, we must certainly enlarge its meaning, and give it wider scope, for we have seen that many diseases, strictly local, perhaps accidental, and, therefore necessarily local, may be followed by the most general manifestations. Unless the latter are the result of a simple diminution of vitality of the whole body, which allows the latent morbid tendencies of individual parts to show themselves, we should be obliged to maintain either that a local disease had first excited a general condition, which had then manifested itself as such usually do by disseminated lesions, or we must admit that the secondary phenomena were legitimate consequences of the primary. To insist upon the first view would be only to insert between processes often clearly connected a supposititious agent, a mere name and nothing more.

But some of the strongest proofs of this disposition to generalization are furnished by manifestations so common that their real import has been overlooked. It is many centuries since the tongue attracted attention as an exponent of disease elsewhere. Nothing could be more minute than the descriptions of its changes as connected with the modification of parts more or less remote, but it seems never to have been suspected that it was one of the most obvious expressions of a general law, which regulates the relations of the various parts of the body.

The common occurrence of a sudden transfer of the inflammation in mumps from the parotid gland to the testicle is only another manifestation of the same law, but no ichor or morbific agent has ever been discovered.

In gonorrhœa, where the inflammation of the urethra is caused by matter which cannot properly be called specific, like that of syphilis, the joints may be affected as in rheumatism. When we consider the morbid processes excited in various parts of the body by exposure to cold, we shall not be inclined to regard as at all remarkable the cases cited in the first part of the paper. An impression made upon the outer surface in this way is followed in one person by coryza, in another by bronchitis, in a third by pneumonia, in another by some abdominal disease, or by general articular

rheumatism. The cold produces a certain impression, like innumerable other agents, and the parts respond according to their susceptibilities or proclivities. Why such marked results should follow from so slight a cause, at times when much more powerful influences are resisted, we cannot say. Sometimes the exposure is so slight as to be hardly or not at all noticed, and yet the gravest consequences follow; while at other times the resistance of the body is almost beyond belief. The seeming contradiction is, however, no greater here than in other cases, where there is the same want of correspondence between the initial structural change and the consequences which follow it.

Dr. J. Ross* quotes Dr. Bennett as speaking of pleurisy, pneumonia and bronchitis, after the sudden exposure of the chest to a draft of cold air, and adds that all the cases show that *influences may pass from one part of the body to another without more direct anatomical connection than exists between the surface of the body and the internal organs.*

But if diseased action may be in this way excited, it may when already existing be also influenced beneficially by the external application of various means, such as cold, heat, galvanism, &c. Certainly no material agent is active here.

In the absence of this in so many cases, where nothing but an immaterial cause of disease can be detected, it seems absolutely necessary to admit the agency of the nervous system. It is not necessary to cite instances of the well known influence of the mind upon the functions of the body, whether for good or evil. Impressions upon the special senses furnish many instances of the same kind.

Changes in one part of the nervous system may be followed by striking modifications of distant portions of the same. This is shown by the numerous reflex phenomena which have become a part of classical medicine. Dr. Brown-Séquard has shown that section of the sciatic nerve may produce such a change in distant parts of the nervous system, as to make an epileptic fit possible, on pinching the skin of the neck, though such a stimulus would previously have no effect of the kind.

But as our intention has been to show the more or less extensive *generalization of structural changes*, and explain, if possible, their connection, it is necessary to show that they may correspond with the distribution of nervous branches, or may be immediately connected with injury or disease of the nervous centres or particular nerves. Of this there is abundant evidence. Damon* states that "in many cases herpes labialis is sympathetic in its origin. The same may be said of zoster. Cold gives rise to both of these varieties of herpes; so also do affections of the internal organs." After quoting several authors, he adds:† "From a careful study of these writers, together with our own observations of numerous cases, we feel assured that herpes zoster, phlyctenoides, labialis and præputialis, are only local varieties of a vesicular eruption, which is distributed upon the *tracks* and *terminal filaments of the different cutaneous nerves.*"

Dr. R. T. Edes‡ states that "herpes is a disease which is quite generally considered to be a neurosis, especially when occurring in the form of zoster.

"Its frequent connection with neuralgia, its following the course and distribution of nerve trunks, and its usual (though not invariable) unilateral occurrence, are the symptoms which give to it this character. Zoster, like a multitude of other diseases, is said to be caused by sudden emotion, especially anger. Charcot§ reports two cases of herpes, one in the course of a sciatic neuralgia, the other accompanying a traumatic neuralgia, which followed a gunshot wound. Brown-Séquard‖ also reports a case where herpes occurred after cicatrization of a gun-shot wound, in a place deprived of sensibility."

Dr. Edes¶ again says that "*lesions of nutrition, as a consequence of irritation, are,* however, if the explanations heretofore adopted in this essay are correct, *much more varied than those following paralysis.*" He cites cases of unilateral atrophy of the face, probably caused by lesions of nerves, and shows how the opposite condition, hypertrophy, may accompany or succeed disease of the sympathetic** in exophthalmic goitre. He also quotes cases cited by Paget.†† In the first, after injury to the median and other nerves, with adhesion to adjacent tissues and induration of both it and them, the patient had constant pain, impairment of touch, contraction of fingers and constantly repeated ulcerations at the back of the hand. In the second case, a man was at Guy's Hospital, whose median nerve was compressed by excessive formation of bone after a fracture. Ulcerations on thumb,

* Practitioner, vol. ii. p. 78.

* Neuroses of the Skin, p. 61. † P. 70.
‡ The Physiology and Pathology of the Sympathetic or Ganglionic Nervous System, p. 141.
§ Journal de la Physiologie, vol. ii. p. 108.
‖ Ibid, note. ¶ P. 121. ** P. 132.
†† Surgical Pathology, Am. Ed., 1860, p. 42.

fore and middle fingers could be cured only by so binding the wrist that, the parts on the palmar aspect being relaxed, the pressure on the nerve was removed. So long as this was done, the ulcers became and remained well; but as soon as the man was allowed to use his hand, the pressure on the nerves was renewed, and the ulceration of the parts supplied by them returned.

Two cases are also quoted by Romberg,* in which lesions of nutrition were observed in the eye and gums, caused by disease of the origins of the trigeminus and Gasserian ganglion.

Many other cases of a similar character are recorded, but we have cited a sufficient number to show that impressions made upon the nervous system may be followed by structural changes in the tissues supplied by the nerves involved.

Admitting this, it seems reasonable to suppose that *disease of some internal part* may, in the same way, produce such an impression upon the sympathetic or cerebro-spinal system that distant parts may respond. It is only an *impression*, a *force*, we need; whether grief, cold, heat or inflammation, is of no consequence. The exciting causes may be either external or internal, and almost infinite in number, although the anatomical changes with which nature expresses herself in what we call disease may be limited. If a chill may cause sore throat or pneumonia, they in turn may give rise to chills. In other words, external cold may cause a metamorphosis of tissue, and a similar metamorphosis commencing within may excite correlatively the phenomena of heat, cold, &c.

We must, therefore, remember that morbific causes, when judged by their effects, may be *analogous* but not *identical*.

While recognizing fully the difficulty and intricacy of the problem before us, we seem justified in believing in the existence of such a unity or solidarity in the body as to render possible the generalization of diseases which have been regarded as essentially local, the liability to this varying as much as in impressions produced by external causes.

ON VISCERAL NEURALGIA AND ANGINA PECTORIS.

Prof. Eulenburg, of Berlin, has made a special study of neuralgia of the visceral organs, including angina pectoris. This latter disorder, he considers, can occur as a symptom of various diseases of the heart, and it seems especially associated with ossification of the coronary arteries. Cases, however, do occur in which there are lesions of those arteries without the angina pectoris, and, on the other hand, in which there is the pain without the lesion.

All the nerves which are associated with the heart have been in turn considered the seat of this disease. M. Eulenburg agrees with those who do not think it a simple hyperæsthesia of the cardiac plexus, but give to certain motor nerves of the heart a participation in the change. We cannot, however, as yet distinguish the individual nerves which are implicated, or the functional changes which produce the attacks. Notwithstanding the progress in the study of the nerves of the heart in the last ten years, it is still impossible, with the complexity of the phenomena with which we have to deal, to find one general and absolute explanation of the symptoms. We must necessarily content ourselves with a physiological analysis of the symptoms, and demonstrate experimentally how far each group of nerves is involved.

The pain of angina pectoris seems to be traced to the cardiac plexus of nerves. The heart appears, indeed, in the healthy state, to be destitute of sensation; but in diseased conditions might it not be the seat of pains analogous with those of gastralgia, colic and the like? In mammals the heart receives sensitive nerves which do not originate in the pneumogastric, since, after section of both vagi, the animal shows signs of pain when the auricles are irritated; it may be, therefore, that the distress is due to fibres from the sympathetic, for it resembles that produced by the irritation of certain sympathetic nerves in the viscera as in gastralgia.

This neuralgia of the cardiac nerves is easily explained where there is mechanical irritation from some organic affection, like ossification of the coronary arteries or valvular lesions of the aorta. But where there is no such condition, the explanation is still wanting; and, moreover, it fails to explain the paroxysmal character of the attacks.

The radiation of the pain toward the extremities is accounted for by the anastomoses existing between the cardiac nerves and the cervical ganglia on the one hand, and the roots of the cervical nerves and the branches of the brachial plexus on the other.

The pain in the course of the cervical

* R. T. Edes. Physiology and Pathology of Sympathetic System, p. 130.

plexus is due to the connection between the cardiac plexus and the anterior branches of the last four cervical and the first dorsal nerves. The pain in the left arm is traced to the connection between the anterior branch of the first dorsal nerve and the inferior trunk of the brachial plexus. The pain is more frequent in the left side, either on account of the position of the heart and aorta on that side, or because the anastomoses are more intimate there. The superficial pain in the front of the chest is due to the communication of the brachial plexus with the thoracic nerves, and that in the region of the diaphragm to the anastomosis of the phrenic with the fourth and fifth cervical and with the cardiac nerves. The dysphagia, nausea and impaired phonation may be traced to the connection between the par vagum and the sympathetic.

Except the pain, the most important symptom pertains to the impaired action of the heart during the attack. But it can be shown that the phenomena can have their origin in different groups of nerves. The heart contains ganglia which constitute an automatic system, and conditions which paralyze these cause an arrest of the heart's movements.

Thus Landois has demonstrated that the automatic action of the ganglia is impaired in two ways—the function is either stimulated or much depressed. Weak solutions of certain poisons irritate the ganglionic cells and stimulate the action of the heart; concentrated solutions immediately paralyze the ganglia and arrest the heart's movements. In certain diseased states of the heart, the cardiac ganglia may be affected in various ways. Under the influence of certain lesions of the vessels, or of the parenchyma, which modify the distribution of blood to the ganglia, or by such changes in the muscular tissue as myocarditis and fatty degeneration, it is possible that the heart may be affected in both directions; in one case, the stimulated ganglia hasten the movements; in the other, the action of the heart is paralyzed by a too powerful stimulus.

The two phenomena may manifest themselves alternately during an attack of angina pectoris.

Other physiological facts favor this theory that the cardiac ganglia may be influenced in consequence of a diminished supply of blood, such as would result from disease of the aorta or of the coronary arteries. Indeed, Bezold has observed that the action of the heart is modified in the rabbit where the coronary arteries or their branches are closed temporarily, after first dividing the pneumogastric, the sympathetic nerves in the neck and the cervical portion of the spinal cord. In the first ten or twelve seconds, no noteworthy change is seen, but gradually the heart beats more slowly and irregularly; there are in the first two or three quarters of a minute alternately fast and slow impulses; and, at the end of a minute or a minute and a half, the ventricles cease to contract; the movements recur, however, as soon as the pressure is removed and the circulation is restored.

Is it possible to explain the symptoms by changes in the pneumogastric nerves? According to Eulenburg, in the majority of cases the state of the pulse is opposed to such an hypothesis. Indeed, the pulse is quick and small, thus indicating a paresis of the par vagum. Yet there are cases in which the pulse is slow, and others in which, with this slowness, an increase in the force has been noticed. These exceptional cases are cited by Eulenburg in favor of the theory of stimulation of the pneumogastric. To these facts should be added a remarkable observation of Heine in which, after symptoms resembling those of angina pectoris, there were found lesions of the par vagum accompanied as well by changes in the phrenic and cardiac nerves. These exceptions show that the changes in the pneumogastric nerve can hardly explain the majority of the phenomena.

It remains to examine the part which the sympathetic nerves may play. These nerves proceed from the brain, from the cervical and upper part of the dorsal portion of the spinal cord, and, passing through intermediate cervical ganglia, their function is to transmit to the ganglia the central excitation, acting in a direction contrary to that of the pneumogastric. Consequently, the excited action of the heart in angina pectoris may be considered as dependent on the exaggerated action of the ganglia through the sympathetic.

This theory that the cardiac plexus and more especially the sympathetic nerves are affected in this disease finds support in an observation by Lancereaux, in which he points out certain histological changes in the cardiac plexus.

The sympathetic system can participate in another way. The sympathetic trunks contain the vaso-motor nerves; changes in these branches will determine local affections in the circulation whence result mod-

ifications in the intra-aortic pressure and consequent feebleness of the cardiac impulse.

The complex series of symptoms which characterizes angina pectoris may, in short, be the result of various conditions; may, indeed, exist entirely regardless of any participation by the heart; all the cardiac nerves are more or less involved, and the numerous modifications observed in different patients can be referred to a more or less prominent implication of the nerves of the cardiac plexus, the influence of the nerves of the great sympathetic predominating, since they form the greater part of the plexus.—*Gazette Hebdomadaire.*

Medical and Surgical Journal.

Boston: Thursday, October 13, 1870.

PROFESSIONAL WANTS.

We are induced to append this title to our Editorial for the week, on account of the need which has long been felt among us of a professional headquarters for our city and State. We wish, moreover, to prolong the echo of the discussions which have taken place in our Societies of late on this subject, and so, by keeping the subject before our brethren, lead them to efficient action during the coming season.

It is certainly to be regretted that the nature of our calling makes us, as physicians, solitary beings. Each one goes his daily round, the centre of his own little world, infallible, in his own view, without the aid of an Ecumenical Council, feeling his little jealousies towards his brother who is perhaps encroaching on one of his pet families; thus it is with the profession, and, beside a nod on the streets of our cities or a few words passed from one sulkey to another on our country roads, a large part of the profession hardly interchange a thought or sentiment. It is, to a certain extent, different in our large cities, where we have our societies and hospitals; but even there our wants are not fully or well met. "Like the shingle on the seashore, the power of adhesion in the profession is feeble; it is composed of separate and independent pebbles, each knocking his neighbor below him and keeping him there, if possessed of sufficient power to do so." In this way we lose mutual aid and counsel; we are prevented comparing our knowledge with that of other men, and become, consequently, ignorant of our deficiencies in an ever advancing science. Would that some means might be adopted which should ensure the more frequent professional and social intercourse of our brethren, and so bring about the common good of all.

One great need among us at the present is a professional rallying point, toward which we can look as the headquarters of our brethren for the city. Nor do we speak of our city alone, but for the State and for New England, all parts of which are apt to look to Boston for its cue in the movements of the day. In the city of our publication alone we have some eight or ten medical societies. The Massachusetts Medical Society, for its meetings of Councillors and its Suffolk District Society, have leased rooms, which by reason of architectural improvements in other directions, by the various fractures and attritions of age to be observed in the furniture, and the absence of many conveniences, have become unfitted for our use. The Improvement and Observation Societies occupy the same rooms, for want of better; while the Obstetrical, the Medical Benevolent and the Biological, as well as the student society, the Boylston, either meet at private houses or in other localities. Each one of these last-named organizations, however, would probably gladly meet in a society's building, especially if conveniences were provided for the physical refreshment which renders these gatherings socially as well as professionally attractive. In addition to our own medical societies, the Massachusetts Dental Society and the American College of Pharmacy are also tenants, and would willingly coöperate with the strictly medical societies in providing suitable and convenient quarters. We are confident, too, that we should find a ready associate in still another important scientific society of our city, whose present rooms, we have reason to know, are already needed for other purposes.

We are not proposing a change in the place of meeting of our Boston Societies,

for the sake of Boston men alone. What we need is this: a scientific headquarters for the Massachusetts Med. Society, around which, as the older if not more substantial body, the other societies should gather, and, by bearing their proportion of the expenses, should coöperate in maintaining a meeting-place which should be a credit to us.

We need a building or an ample suite, which shall be, in truth, the centre of medical and allied sciences for the New England States; with rooms sufficient for the meetings of the Massachusetts Medical Society, or, at least of its Councillors, for the Suffolk District Society and the other larger or smaller bodies; for the important collection of the Improvement Society, now displayed in an insecure building; and for the collections and libraries of the other societies. We should be glad to see such an establishment made an Academy of Science, which should be the recipient of medical and scientific knowledge for our Northeastern States, for distribution in such way as would be useful to physicians and scientific men wherever located. Is not the present time an important one to take the first step?

THE ALBANY MEDICAL COLLEGE.

We are rejoiced that the insertion in the Journal of an item from a secular paper has had just the effect we desired—to call out a response from the Faculty of the Albany Medical College in vindication of the noble old school we have so long known and respected. The name of each member of the Faculty is held in high esteem among the profession in New England, and it was a cause of great regret to us to receive from a correspondent in Albany the newspaper item which cast reflections on the Albany School. We certainly felt surprised that notice was not taken of the article when it first appeared, and in the locality where its injurious influence must be most felt. The following comes to us:—

Messrs. Editors,—My attention has been called to the paragraph published in your Journal of the 15th inst., in relation to the Albany Medical College. While this paragraph in its original locality might have no importance, yet when copied into the pages of a Medical Journal it seems likely to give rise to erroneous impressions. I therefore ask you to publish the following statement of facts in the case:

The Hon. Ira Harris, alluded to as giving the introductory address at the opening of the Medical College, is one of the Professors in the adjoining Law-School, and President of the Board of Trustees of the Medical College.

His course on Medical Jurisprudence will be delivered before the Law and Medical classes in his own Lecture Hall. He was invited by the Faculty of the Medical College to deliver this course, not on the ground of any medical theories or beliefs he might hold, but solely for his eminent legal attainments and qualifications as an instructor in this department.

Even were his beliefs of the character attributed to him by this unknowu correspondent, it is difficult to see how he could well display or inculcate them in connection with the subject of Medical Jurisprudence, but I learn upon inquiry from Mr. Harris himself that he has never been an advocate of the homœopathic system of medicine.

Among a large and mixed audience who listened to the public introductory address of Mr Harris there must have been present persons holding different views on the subjects of Law, Religion and Medicine. The presence on that occasion of three homœopathic physicians (for that is the number actually present as I have been informed) no more identifies the College with their system of medicine, than would the presence of three clergymen of similar religious belief give it a particular denominational character.

The names of the medical faculty of the Albany Medical College are surely a sufficient guaranty of the orthodoxy of the institution, and from the fact that they have been so recently published in your advertising colums as connected with the college, I am the more surprised that you could so carelessly reflect upon them and the good name of an old and honored institution by picking up and publishing the misrepresentations of an anonymous newspaper correspondent.

It is gratifying to know that notwithstanding persistent efforts of a character similar to the one in question to injure it, the attendance of students at the College is larger than usual, and its prospects were never more encouraging than at present.

The Albany Medical College means to deserve the confidence thus shown in it, and

in all things to keep faith with and fulfil its promises to the profession.

I remain yours respectfully,

JOHN V. LANSING, *Registrar.*

Albany, N. Y., September 26, 1870.

RECENT experiments by a French physiologist demonstrate that digitalis diminishes the relative amount of urea in the urine; and that this diminution corresponds with the depression of the circulation and is the corollary of it. The action of this agent as an antiphlogistic is thus explained.—*Gaz. Hebdomadaire*, Aug. 12, 1870.

M. BROCA recently exhibited before the Imperial Society of Surgery in Paris the heart of a man thirty-one years old who, with intent to commit suicide, had stabbed himself in two places in the fifth intercostal space. Fifteen days after the injury he died of pyæmia, having, in the interval, inflicted other injuries in the neck and the temple with a fork. At the autopsy it was found that the heart and pericardium had received a penetrating wound. The pericardium was cicatrized. A false membrane bound the right edge of the heart to the parietal fold of the pericardium. On the inner surface of the left ventricle, near the apex, was a firm cicatricial depression. The case demonstrates that solutions of continuity in the cardiac walls are susceptible of being readily healed.—*Ibid.*, August 5, 1870.

DEATH UNDER THE ADMINISTRATION OF CHLOROFORM. On Friday of last week, an unfortunate occurrence happened at the Royal Free Hospital. A man thirty-four years of age had on the previous Wednesday received a severe wound on the finger from a kick of a horse. A suture had been put in at one of the hospitals. He was admitted into the Royal Free Hospital the following evening, with symptoms of tetanus. It was decided on the following day to remove the finger. While the chloroform was being administered on a piece of lint, and after having inhaled the anæsthetic for three or four minutes, he struggled violently, and shortly expired. Every means was adopted to resuscitate the patient, but without success.—*British Med. Jour.*, Sept. 24, 1870.

BY balloon express from Paris, we learn that the Americans remaining in the city are still busy organizing and fitting out ambulances for the use of the wounded. The brevity of our despatch prevents giving particulars.

BOSTON DISPENSARY.—The following are the statistics of this institution for the year ending Sept. 30th, 1870. The number of new patients at the Central Office is 16,994, of which 12,062 are medical cases, and 4932 surgical, classified as follows:—

MEDICAL.

	Men.	*Women.*	*Children.*	*Total.*
1st quarter,	556	916	780	2252
2d "	713	1210	615	2538
3d "	883	1081	1019	2983
4th "	902	1677	1710	4289
Total,	3054	4884	4124	12,062

SURGICAL.

1st quarter,	317	315	346	978
2d "	336	327	431	1094
3d "	445	388	435	1268
4th "	543	494	555	1592
Total,	1641	1524	1767	4932

The number of new patients in the Districts is as follows:—

	Men.	*Women.*	*Children.*	*Total.*
1st quarter,	363	738	811	1912
2d "	377	863	1203	2443
3d "	343	866	974	2183
4th "	353	890	1153	2396
Total,	1436	3357	4141	8934

RESULTS.

Discharged, cured or relieved,	8254
Sent to Hospitals, or removed from Districts,	349
Died,	322
Under treatment,	108
	9033
Under treatment at last annual report,	99
	8,934
Number of cases at Central Office,	16,994
Total number at Central Office & in Districts,	25,928

PATIENTS, NEW AND OLD, AT CENTRAL OFFICE.

	Medical.	*Surgical.*	*Total.*
1st quarter,	4778	1376	6154
2d "	5594	1674	7268
3d "	7359	1831	9190
4th "	7502	2386	9888
Total,	25,233	7267	32,500

Number of cases of midwifery,	148
Number of recipes,	54,487
Number of recipes since July, 1856,	603,428
Number of patients since July, 1856,	283,328
Average daily attendance,	105

SURGEONS.

Francis H. Brown, M.D. J. Brackett Treadwell, M.D.
John Homans, M.D. Samuel W. Langmaid, M.D.
AURAL SURGEON—Clarence J. Blake, M.D.

PHYSICIANS.

J. McLean Hayward, M.D. Charles E. Inches, M.D.
P. A. O'Connell, M.D. J. Franklin Appell, M.D.
Charles B. Porter, M.D. David F. Lincoln, M.D.
Frederic I. Knight, M.D. Henry H. A. Beach, M.D.
F. B. Greenough, M.D. Robert Disbrow, M.D.
Wm. F. Munroe, M.D. (Vacancy.)

DISTRICT PHYSICIANS.

No. 1.—Henry Tuck, M.D.
No. 2.—John B. Fulton, M.D. (East Boston.)
No. 3.—Thomas F. Goddard, M.D.
No. 4.—Wm. H. H. Hastings, M.D.
No. 5.—Wm. L. Richardson, M.D.
No. 6.—Alfred L. Haskins, M.D.
No. 7.—Orlando W. Doe, M.D.
No. 8.—Horace S. Everett, M.D. (South Boston.)

A. K. Carruthers, Apothecary; Wilber H. Mason, Assistant Apothecary; Walter A. Bartlett, Second Assistant Apothecary.

SAMUEL A. GREEN, M.D., *Superintendent.*

Medical Miscellany.

We are able to announce that the manuscript of Dr. Hay's valuable University Lectures on "Certain Defects of Ocular Refraction, Accommodation and Convergence" will be placed in our hands for publication.

Dr. Charles B. Brigham, as we learn from his brother, is now in charge of a Hospital at Nancy, France. He volunteered for this service under the former (Imperial) French Government, and, on the capture of the city by the Prussians, was retained for the same duty by that Government. We hope to receive advices from him concerning the surgery of the war, as he sees it.

Defect of Epiglottis.—In place of the epiglottis as normally fashioned, there was found by Dr. Eberth, in a female fifty-six years old, merely a fold of the mucous membrane, 5 mms. high and 1 mm. thick, with a crescentiform body of a fibro-cartilaginous consistence 3·5 mms. high. From the point of insertion of this fold of the mucous membrane of the pharynx spread two other wider folds, which turning backwards, under the pointed angle, united, and with the epiglottidean fold closed the three-cornered glottidean cleft. There was no reason to infer that in this case the defect of epiglottis was a secondary abnormity, it was evidently congenital. There were only slight functional disturbances. The case is one seldom met with. Dr. E. cites, as the only recorded case besides his own, that of Targiom Tozetti; even in this case, however, J. F. Meckel believes the defective epiglottis to have been the result of disease occurring after birth.—*Virchow's Arch.* xliii.

The Lower Forms of Vegetable and Animal Life. Professor George Rollestone, of Oxford, in his late book on "Forms of Animal Life," gives a new criterion by which to distinguish animals from vegetables. He says that in the case of all animals the embryo absorbs its yolk from the inside, while in vegetables the germ of seed is surrounded by its albumen. This is a remarkable foreshadowing of the way in which the adult animal or plant absorbs its food, the former by placing it within itself for digestion and assimilation, while the latter takes its food from outside.—*Med. and Surgical Reporter.*

The Use of Ammonia in Hydrophobia.—Mr. J. Silvester (Knutsford), referring to the use of ammonia in India in cases of snake-bites, relates the following case:—About thirty years ago, a rabid dog passed through this neighborhood; a farmer, who had a cow bitten severely on the nozzle, applied to me for a remedy, but as I knew of none, I refused to interfere; but finding that he would take no denial, and that no means had yet been used, though twenty-four hours had elapsed, I gave him 8 oz. of liquor of ammonia, half the P. L. strength, and a piece of lunar caustic, with directions to have the bitten part cut out immediately, and to apply the ammonia to the wound, and afterwards the caustic, and then to give two tablespoonfuls of the ammonia in cold water three times a day as long as it lasted. Considering the cure barely possible, I thought little more about it; but, to my surprise, about ten years after the farmer called and assured me the cow was perfectly healthy. Several animals bitten by the same dog had to be destroyed.—*London Jour. Ph.*

Subnitrate of Bismuth in the Diarrhœa of Young Children.—Heller, in the *Deutsches Archiv für Klinische Medicin*, vol. vi., recommends, in the treatment of the diarrhœa of early life, the subnitrate of bismuth to the extent of from thirty to sixty grains. In the commencement, Dr. H. gave a dose of the remedy every hour until the diarrhœa was arrested, which usually occurred at the end of twenty-four hours. He had never seen any bad result from the use of the remedy. During the continuance of the diarrhœa the patient is to be debarred the use of milk.—*Druggists' Circular.*

To Correspondents.—Communications accepted:—A History of four Cases of Cerebro-spinal Meningitis which occurred in Providence.—Animal Vaccination.

Pamphlets Received.—Transactions of the Medical Society of the State of Pennsylvania, at its Twenty-first Annual Session, held at Philadelphia, June, 1870.

Died,—In this city, Oct. 7th, Dr. John A. Stevens, aged 58 years.—In Randolph, Mass., Oct. 7, Dr. Henry James Martin, in his 76th year, a Fellow of the Royal College of Surgeons of London, and for nearly forty years a member of the Massachusetts Medical Society. Dr. Martin practised as a Surgeon, for nearly twenty years; afterwards he entered the dental profession, in which, for thirty years, he was very eminent, and well known to many of the older citizens of Boston.

Deaths in fourteen Cities and Towns of Massachusetts for the week ending Oct. 1, 1870.

Cities and towns.	Total.	Prevalent Diseases.			
		Cholera Infantum.	Consumption.	Dysentery and Diarrhœa.	Typhoid Fever.
Boston . . .	128	13	18	5	8
Charlestown	10	1	5	1	2
Worcester .	16	1	5	0	2
Lowell . . .	27	4	4	0	0
Milford . . .	6	0	1	1	0
Cambridge .	17	1	4	1	0
Salem	7	0	1	1	2
Lawrence . .	5	0	2	1	0
Springfield .	4	0	1	0	0
Lynn	15	2	2	1	1
Fitchburg . .	3	0	0	1	2
Newburyport	5	0	1	2	0
Fall River .	14	1	5	1	2
Haverhill . .	5	0	4	0	0
	262	23	53	15	19

George Derby, M.D.,
Secretary of State Board of Health.

Deaths in Boston for the week ending Saturday, Oct. 8th, 128. Males, 61; females, 67. Accident, 2—apoplexy, 4—abortion (criminal), 1—inflammation of the bowels, 2—bronchitis, 3—congestion of the brain, 2—disease of the brain, 3—cancer, 4—cholera infantum, 13—consumption, 18—convulsions, 3—croup, 3—cyanosis, 1—debility, 3—diarrhœa, 2—dropsy of the brain, 1—dysentery, 3—erysipelas, 1—scarlet fever, 1—typhoid fever, 8—jaundice, 1—disease of the heart, 4—hæmorrhage, 1—disease of the kidneys, 1—congestion of the lungs, 1—inflammation of the lungs, 10—marasmus, 11—necrosis, 1—old age, 5—pleurisy, 1—premature birth, 1—puerperal disease, 1—scalded, 1—suicide, 1—teething, 1—unknown, 9.

Under 5 years of age, 52—between 5 and 20 years, 9—between 20 and 40 years, 29—between 40 and 60 years, 21—above 60 years, 17. Born in the United States, 90—Ireland, 24—other places, 14.